

AMENDMENTS TO THE CLAIMS:

Please cancel claims 11, 36 and 40 without prejudice or disclaimer.

1-6. (Canceled)

7. (Withdrawn) A method of making a light emitting apparatus, comprising:

providing a light-transmitting portion that includes a recess to house a semiconductor light emitting element, the light-transmitting portion comprising a light transmitting material and the recess being provided with a phosphor layer that is formed on a surface of the recess;

forming an electrode of metal material;

mounting the semiconductor light emitting element on the electrode;

positioning the light-transmitting portion adjacent to the electrode such that said semiconductor light emitting element is housed in said recess; and

bonding the light-transmitting portion onto the electrode such that the phosphor layer of the recess surrounds an upper portion of the semiconductor light emitting element, said light transmitting portion being affixed to said electrode by a sealant formed on said light emitting element,

wherein said light-transmitting portion comprises a convex portion and said electrode comprises a concave portion which engages with said convex portion to allow the light-transmitting portion to be positioned on the electrode.

8. (Withdrawn) The method according to claim 7, wherein the phosphor layer is formed by spraying a phosphor material on the surface of the recess after forming the recess by molding.

9. (Withdrawn) The method according to claim 7, wherein the electrode comprises a lead electrode provided on the surface of a submount member of high thermal

conductivity.

10. (Withdrawn) The method according to claim 7, wherein the electrode comprises a copper-foil electrode provided through an insulation layer on the surface of a base member of high thermal conductivity.

11-45. (Canceled)

46. (Currently amended) A light-emitting apparatus, comprising:

a semiconductor light-emitting element that emits light with a predetermined wavelength; and

an external lens having a light convergence shape to converge light emitted from the semiconductor light-emitting element, said external lens comprising:

a recess to house the semiconductor light-emitting element; and

a phosphor layer portion that is formed on a surface of the recess, the phosphor layer portion including a phosphor to be excited by irradiating light emitted from the semiconductor light-emitting element,

wherein the recess is closely disposed surrounding the light-emitting element such that the light convergence shape converges light radiated from the phosphor layer portion into a spot of light, and

wherein in a horizontal cross section, the recess comprises a maximum inside dimension nearly equal to a diagonal dimension of the semiconductor light-emitting element while housing the semiconductor light-emitting element.

47. (Previously presented) The light-emitting apparatus according to claim 46, wherein the semiconductor light-emitting element comprises a flip-chip type light-emitting diode (LED) element that emits light from its light emission surface located on the opposite side of its mounting surface.

48. (Previously presented) The light-emitting apparatus according to claim 46, wherein

the recess is located close to the semiconductor light-emitting element along the profile of the semiconductor light-emitting element.

49. (Previously presented) The light-emitting apparatus according to claim 46, wherein the semiconductor light-emitting element comprises a plurality of light-emitting diode (LED) elements which are disposed in a predetermined arrangement.

50. (Previously presented) The light-emitting apparatus according to claim 46, wherein the semiconductor light-emitting element comprises a plurality of light-emitting diode (LED) elements which have different emission wavelengths and are disposed in a predetermined arrangement.

51. (Previously presented) The light-emitting apparatus according to claim 46, wherein the phosphor layer portion is formed on an entire surface of the recess.

52. (Previously presented) The light-emitting apparatus according to claim 46, wherein the phosphor layer portion comprises a uniform thickness.

53. (Currently amended) The light-emitting apparatus according to claim 46, wherein a horizontal cross section of the recess comprises one of a circular shape and a rectangular shape.

54. (Previously presented) The light-emitting apparatus according to claim 46, further comprising:

an electrode, said light-emitting element being formed on said electrode, and said external lens being affixed to said electrode by a sealant formed on said light-emitting element.

55. (Previously presented) The light-emitting apparatus according to claim 54, wherein said external lens comprises:

a convex portion and a bottom surface which is formed opposite the convex portion and includes said recess.

56. (Previously presented) The light-emitting apparatus according to claim 55, further comprising:

a submount formed on a concave portion of said electrode, a wiring pattern being formed on a surface of said submount and said light-emitting element being mounted on said wiring pattern.

57. (Previously presented) The light-emitting apparatus according to claim 56, wherein said electrode comprises a plurality of leads, and said submount is formed on said plurality of leads.

58. (Previously presented) The light-emitting apparatus according to claim 57, wherein a gap is formed between a surface of said phosphor layer portion and said light-emitting element, said sealant filling said gap.

59. (New) The light-emitting apparatus according to claim 46, wherein said semiconductor light-emitting element is mounted on an electrode and said external lens is mounted on said electrode, and

wherein the recess includes a rectangular-shaped horizontal cross-section and a planar surface which is formed opposite a light-emitting surface of said light-emitting element, such that the recess is closely disposed surrounding the light-emitting element and the light convergence shape converges light radiated from the phosphor layer portion into a spot of light.

60. (New) The light-emitting apparatus according to claim 59, wherein light emitted from said light-emitting surface is incident on said light convergence shape of said lens via said planar surface of said recess.

61. (New) A light-emitting apparatus, comprising:

an electrode formed on a surface of one of a lead and a wiring board;

a semiconductor light-emitting element that has a rectangular-shaped horizontal cross-section and is flip-chip mounted on said electrode and emits light with a predetermined wavelength; and

an injection-molded external lens comprising:

a planar surface which is mounted onto a planar surface of said electrode over said light-emitting element;

a light convergence shape formed on a side of said external lens which is opposite the planar surface, for converging light emitted from the light-emitting element;

a recess formed in said planar surface of said lens and forming an upper portion of a housing for the semiconductor light-emitting element, said planar surface of said electrode forming a lower portion of said housing; and

a phosphor layer portion that is formed over an entire surface of the recess and has a uniform thickness, the phosphor layer portion including a phosphor to be excited by irradiating light emitted from the semiconductor light-emitting element; and

a sealing resin formed in said recess between said light-emitting element and said phosphor layer portion, which seals said light-emitting element and bonds said external lens to said electrode,

wherein in a horizontal cross section, the recess comprises a maximum inside dimension nearly equal to a diagonal dimension of the semiconductor light-emitting element while housing the semiconductor light-emitting element.